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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/537,977   | 06/09/2005  | Gerard Benard        | TS5584 US           | 6950             |
| 23632  | 7590        | 03/05/2009           | EXAMINER            |                  |
| SHELL OIL COMPANY<br>P O BOX 2463<br>HOUSTON, TX 772522463 |             |                      |                     | OLADAPO, TAIWO   |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 1797   |             |                      |                     |                  |
| MAIL DATE  |             | DELIVERY MODE        |                     |                  |
| 03/05/2009   |             | PAPER                |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/537,977             | BENARD ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | TAIWO OLADAPO          | 1797                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 02 December 2008.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-25 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

**DETAILED ACTION**

*Response to Amendment*

1. The amendment dated 12/02/2008 has been considered and entered for the record. Applicant's amendment overcomes previous rejections but are moot in view of new grounds of rejection.

*Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 – 10, 12 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Ballegoy et al. (WO00/29511) in view of Nalesnik et al. (US 6,103,674).

6. In regards to claim 1, Van Ballegoy teaches a process to prepare a lubricant by hydrocracking feeds containing 50% or preferably at least 90% of waxy compounds (page 3 line 27 – page 4 line 1) in the presence of hydrogen with a Group VIII metal compound supported by a refractory oxide carrier (page 4 lines 8 – 29) under hydrocracking conditions sufficient to achieve 16.7% or 30% of wax in the hydrocracked product (Table II & IV) which amounts to conversions of from 40 to 81.4%, overlapping the claimed range.

Ballegoy further teaches catalytic dewaxing of the hydrocracked feeds, wherein various zeolites including MTW types can be used such as ZSM 12 etc (page 7 lines 25 – 29, Examples 2a, 2b, 2c). Ballegoy teaches high yields with overlapping ranges of the pour point and viscosity index (VI) values of claim (See Table I – VII). In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

Ballegoy does not teach adding a pour point depressant to the base oil product. Nalesnik teaches additives for lubricant compositions including pour point depressants (title, column 12 lines 50 – 63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have added the pour point depressant of Nalesnik to the lubricating oil prepared by Ballegoy in order to improve the flow properties of the lubricant at lower temperatures, which is an important property in the invention of Ballegoy. Since all steps of the process are taught having overlapping ranges by the combined references, the product obtained will also have an overlapping range of the dynamic viscosity of claim.

7. In regards to claim 2, Ballegoy and Nalesnik combined teach the process wherein the oil has a viscosity index of 151 and pour point of -30 (Ballegoy; page 28, Table VIII)

8. In regards to claim 3, Ballegoy and Nalesnik combined teach the process wherein the noble Group VII metal is platinum (Ballegoy; page 6 lines 23 – 29) and the binder is a low acidity binder which is free of alumina or dealuminated as previously stated.

9. In regards to claim 4, Ballegoy and Nalesnik combined teach the process wherein the binder is silica as previously stated.

10. In regards to claim 5, Ballegoy and Nalesnik combined teach the process wherein the zeolite crystallites have been subjected to selective surface dealumination process as previously stated.

11. In regards to claim 6, Ballegoy and Nalesnik combined teach the process, wherein the dealumination process comprises contacting the zeolites with fluorosilicate salt of the formula in claim 6 (Ballegoy; page 11 lines 1 – 17).

12. In regards to claim 7, Ballegoy and Nalesnik combined teach the process wherein the process of step (a) occurs before the process of step (b) of claim 7, or in a series flow as previously noted (see Ballegoy, page 4 lines 8 – 35; page 3 lines 23 – 26).

13. In regards to claim 8, 10, Ballegoy and Nalesnik combined teach the process, wherein feed comprises up to a maximum of 3% or 30,000 ppm of sulfur before hydrodesulphurization is necessary (Ballegoy, page 3 lines 19 – 26) and effluent is a series flow as previously stated. Ballegoy teaches hydrotreating in order to reduce sulfur and nitrogen (ammonia) in the feedstock by using catalysts in sulphidic form comprising non-noble Group VIII metal and Group VIB metal (Ballegoy, page 4 lines 4 – 26). Thus the process of removing sulfur and nitrogen (ammonia) through hydrotreating intrinsically involves separating them from the feedstock before hydrocracking, as in the claim 10.

14. In regards to claims 9, 22, Ballegoy and Nalesnik combined teach the process comprising a conversion of for example 55% of wax or a yield of 45% during the hydrocracking process or step (a) which meets the limitation of the range in claims 9, 22 (Ballegoy, page 28, Table VIII).

15. In regards to claim 11, Ballegoy and Nalesnik combined teach the process, wherein the product has an overlapping rate of conversion as previously stated. Therefore, the process would have intrinsically been performed at the similar pressure conditions as in the claim.

16. In regards to claim 12, Ballegoy and Nalesnik combined teach the process, wherein the catalyst used for hydrodesulphurization is a presulphided catalyst comprising nickel and tungsten on an acid amorphous silica-alumina carrier (Ballegoy, page 4 lines 8 – 29).

17. In regards to claims 23, Ballegoy and Nalesnik combined teach the process wherein the hydrocracking step (a) occurs at the temperature of from 200 to 500°C (Ballegoy, page 5 lines 9 - 13) which overlaps the cracking temperatures for kerosene fractions that ranges from 150 to 275°C and gas oil that ranges from 175 to 600°C. Thus kerosene and gas oil products are intrinsically present.

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18. In regards to claims 13, 14, 17, 18, 20, 21, Ballegoy and Nalesnik combined teach the process but do not particularly recite the various parameters of the process such as hydrodesulphurization activity, n-heptane cracking test value, surface area, and pour volume of the catalyst used in the process which are result effective variables that can be optimized through routine experimentation to meet desired properties. One of ordinary skill in the art would have found it obvious to optimize these parameters through the selection of specific catalysts that meets the desired characteristics. It is further noted that measure the values obtained during specific tests alone do not necessarily impact patentability of the otherwise obvious process.

19. In regards to claim 16, Ballegoy and Nalesnik combined teach the process. Ballegoy teaches that the content of alumina in the hydrodesulphurization catalyst refractory oxide carrier is an overlapping range of from 0 to 100% (Ballegoy, page 4 lines 26 – 33). It is 0% when only silicate is used or 100% when only alumina is used in the support or carrier.

20. In regards to claims 15, 19, Ballegoy and Nalesnik combined teach the process, wherein the catalyst is impregnated with nickel in the amount of from 1 to 25 wt. % in an overlapping range of claim 19, and tungsten in the amount of from 5 to 30 wt. %. Ballegoy and Nalesnik combined do not teach using chelating agents during the process of impregnation.

Applicant admits that it has been taught in prior art to use chelating agents in preparing the catalysts which increases the activity of the hydrodesulphurization catalysts (See applicant's specification page 8 line 29 – page 9 line 4). Thus one of ordinary skill in the art at the time of the invention would have known to use chelating agents in the impregnation of the catalyst according to the combine process of Ballegoy and Nalesnik in order to improve the activity of the catalyst.

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21. Claims 24, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Ballegoy et al. (WO00/29511) in view of Nalesnik et al. (US 6,103,674) in view of Le et al. (US 5,306,416)

22. In regards to claims 24, 25, Ballegoy and Nalesnik combined teach the process but do not particularly recite that a fraction of hydrocracked effluent is separated prior to dewaxing. Le teaches a hydrocracking waxy hydrocarbon feedstock for preparing lubricating oils similar to Ballegoy and Nalesnik combined (column 6 lines 40 – 52; column 7 lines 1 – 5, 30 – 40). In Example 6, Le teaches that hydrocracked wax having 72% yield can be subjected to dewaxing, wherein only 43% of the hydrocracked wax undergoes the dewaxing process. It would have been obvious to one of ordinary skill in the art at the time of the invention to have subjected only a fraction of hydrocracked waxes in the invention of Ballegoy and Nalesnik combined to, as Le teaches it is a suitable process for preparing lubricating oils.

### ***Response to Arguments***

23. Applicant's arguments with respect to claims 1 – 21 have been considered but are moot in view of the new ground(s) of rejection.

24. Applicant primarily argues that Ballegoy does not teach step (a) of the process involving having from 40 to 70% wax conversion. However, Ballegoy teaches that hydrocracked feeds can contain 16.7% or 30% of wax as compared to a feed having 50% or preferably 90% wax, which provides an overlapping range of conversion.

25. Applicant argues that Ballegoy does not teach the VI of the claim using MTW type catalyst. However, Ballegoy teaches overlapping ranges of VI that can be obtained using the

catalysts cited in the reference. The applicant cites that ZSM-5 catalysts were used in obtaining the higher viscosity index product, but also Ballegoy obtains lower viscosity index products using the same ZSM-5 catalysts. In performing the process according to the teachings of Ballegoy using various catalysts including MTW types, higher or lower VI can be obtained which overlaps the claimed invention.

26. Applicant argues that Ballegoy does not teach the lubricant prepared having the dynamic viscosity recited in the claimed invention or the pressures used in the process of hydrocracking and dewaxing. However, since Ballegoy teaches the process having conversion which overlaps the claimed invention, the pressures used are similar as stated above. Since Ballegoy teaches using the catalysts of the claimed invention, oils having similar dynamic viscosities will be produced by using the MTW-type catalysts listed in performing the invention.

***Conclusion***

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAIWO OLADAPO whose telephone number is (571)270-3723. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TO

/Glenn A Calderola/  
Acting SPE of Art Unit 1797